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The Role of Open TAAA in 2026

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Outcomes

- Early Outcomes
 - In-hospital / 30 day-mortality
 - Stroke
 - SCI
 - Renal failure
 - Hospital LOS / ICU stay
- 2 retrospective propensity-matched studies; 2 unadjusted single-centre; 4 population-based unadjusted studies



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
Journal of Vascular Surgery

Volume 68, Issue 6, December 2018, Pages 1936-1945.e5



Review article

A systematic review and meta-analysis of early outcomes after endovascular versus open repair of thoracoabdominal aortic aneurysms

Rodolfo V. Rocha MD^a, Jan O. Friedrich MD, DPhil^b, Malak Elbatarny BSc^a, Bobby Yanagawa MD, PhD^c, Mohammed Al-Omran MD, MSc^d, Thomas L. Forbes MD^e, Thomas F. Lindsay MD^e, Maral Ouzounian MD, PhD^a  





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Outcomes



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- Pooled analysis of all data indicates:
 - Early survival benefit of endo-TAAA [RR 0.63]
 - Lower incidence of SCI in endo-TAAA [RR 0.65]
 - Lower renal failure requiring dialysis in endo-TAAA [RR 0.44]
 - Shorter hospital stay in endo-TAAA
- All other outcome published meta-analyses for endo-TAAA echo the same finding: reduced early incidences of major negative outcomes compared to OSR
- Real conclusion? Glaring need for data



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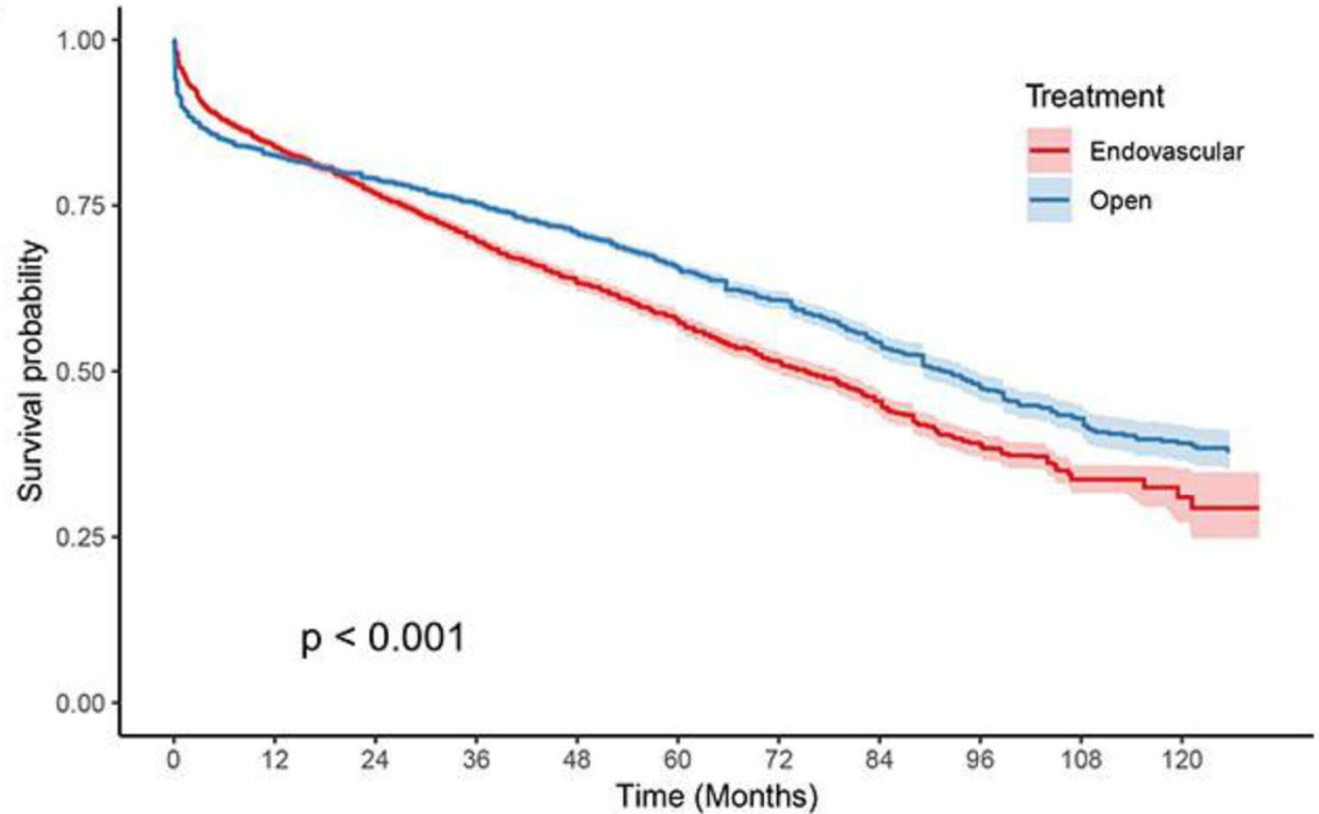


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Outcomes



- Long term outcomes? [“Durability”]
 - Early benefit of improved outcomes lost in landmark analysis at roughly 16 months with cross-over
- Real conclusion? Dismal survival at 5-8 years





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Outcomes



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- Svensson / Roselli group at Cleveland clinic published single centre data on OSR vs. Endo TAAA from 2000 to 2010
 - 457 OSR vs. 596 endo TAAA
- In matched patients, OSR achieved similar in-hospital death and occurrence of paralysis and stroke; had longer post-operative stay, more dialysis and prolonged ventilation
- OSR achieved superior 10-year survival compared to endo-TAAA
 - 52% vs. 33%
- OSR achieved superior freedom from aortic re-intervention
 - 4% versus 21% within the first 2 years



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Healthcare Costs



- 2021 JVS population-based analysis of Endo vs OSR costs of TAAA repair in Ontario
 - TAAA is expensive, regardless of technique
 - 1 month: Endo = \$65,000; OSR = \$37,000
 - Owed to upfront cost of endograft and ancillary devices
 - No difference in cost from 1-12 months after repair
- Other similar studies have demonstrated a significantly higher adjusted total hospitalization cost of OSR due to longer length of stay and higher morbidity after OSR





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Outcomes



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- 2001 prospective trial of outcomes at a high volume academic centre
 - Grouped patients into “good” and “bad” functional status and fitness for OSR and then compared patient outcome to their relative categorization
 - Survival and good functional outcome after OSR is significantly less common than expected; primarily predicted by intraoperative factors
 - Blood loss
 - Visceral / limb ischemic time
- Everyone is good until they aren't



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My view?



Recommendation 65		Changed	
Endovascular repair with fenestrated and branched technologies should be considered as the first line surgical treatment option in patients with thoraco-abdominal aortic aneurysms.			
Class	Level	References	ToE
Ila	C	Oderich <i>et al.</i> (2021), ⁴¹⁹ Dias-Neto <i>et al.</i> (2023), ⁴³⁷ Jobim <i>et al.</i> (2024), ⁴³⁸ Finnesgard <i>et al.</i> (2025) ⁴³⁹	

Recommendation 66		Changed	
Open surgical repair may be considered in selected patients* at low surgical risk with descending thoracic or thoraco-abdominal aortic aneurysms.			
Class	Level	References	ToE
IIb	C	Rinaldi <i>et al.</i> (2025), ⁴⁴⁰ Zeigler <i>et al.</i> (2025), ⁴⁴¹ Cambiaghi <i>et al.</i> (2024) ⁴⁴²	

* Young patients with long life expectancy or with genetic aortopathy.

Plus a few extras....

1. Infectious processes / infected endografts
2. Failed endovascular interventions
3. Aorto-esophageal / bronchial fistula
4. Symptoms resulting from compression of adjacent structures
5. Complex dissections with hostile anatomy for endografting



Branch Vessel Patency / Anatomic Limitation

- Paucity of data on OSR branch vessel patency; 2015 JVS publication aimed at demonstrating long-term patency of renovisceral bypasses to serve as standard to adjudicate endovascular repair
 - 10 year patency of celiac/SMA/LRA/RRA = 100% / 97.5% / 92.3% / 90.3%
- Other key anatomic limitations may favor OSR
 - Lack of healthy PLZ / DLZ
 - Target branch vessel diameter <4mm
 - High preoperative tortuosity index
 - Severe aorto-iliac occlusive disease / lack of access [could likely be mitigated]



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Surgical Expertise



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- Analogous to other areas of endovascular advancement, Endo-TAAA repair will morph OSR into a highly technically skilled, precise procedure for very specific indications with the expectation of increasingly good results
- Standardized techniques will mitigate complications associated with OSR
- **My beliefs:**
 - **Bleeding kills thoracos.**
 - **Use of Fogarty balloons [6-8] for immediate hemostasis**
 - **As many possible sequential clamp sites and stepwise progression**
 - **Reduce renovisceral ischemia – selective perfusion + cold crystalloid**
 - **Reduce SCI as much as possible**
 - **Again, no bleeding; distal perfusion; reimplantation of intercostals with immediate perfusion**
 - **Surgical femoral conduit to allow limb perfusion**
 - **Ensure LSCA / vertebral arterial patency preoperatively and intervene if necessary**
 - **Cool**
 - **MEPS/SSEPs**



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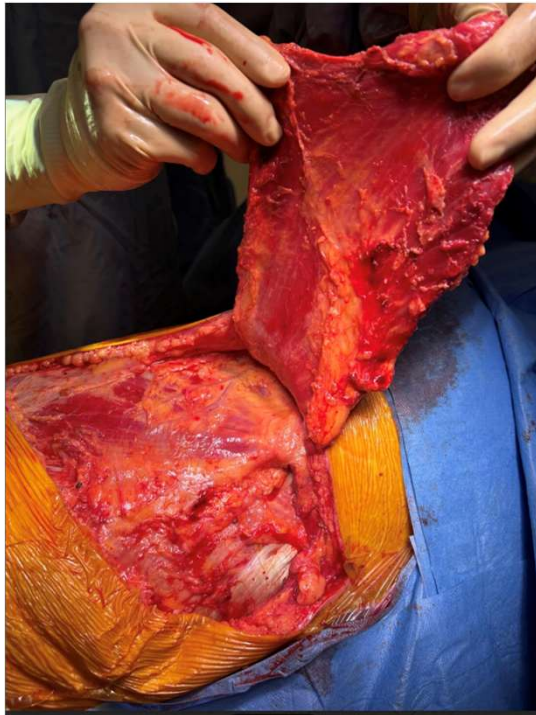


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Endograft Infection



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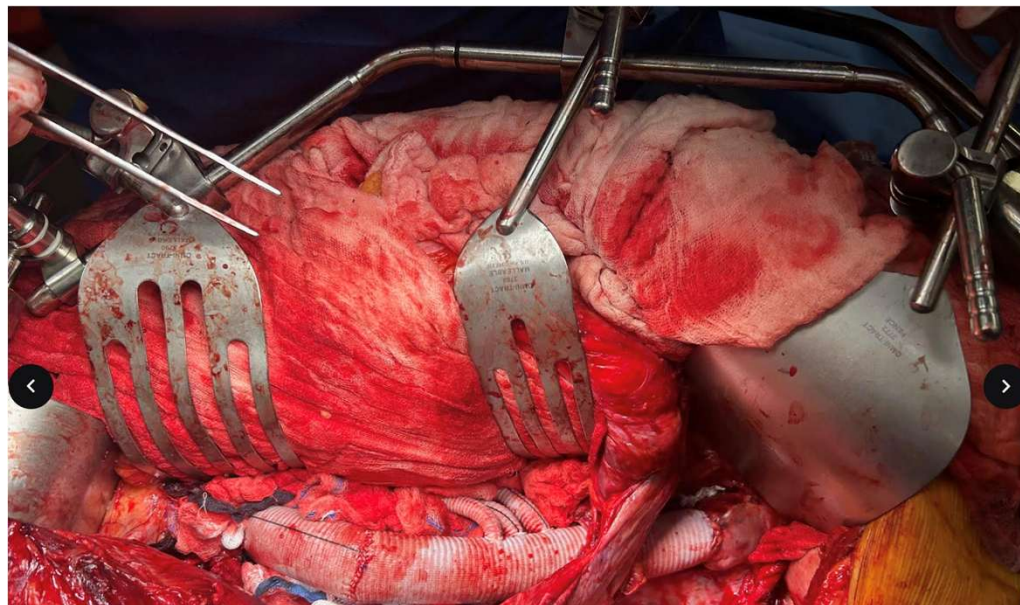
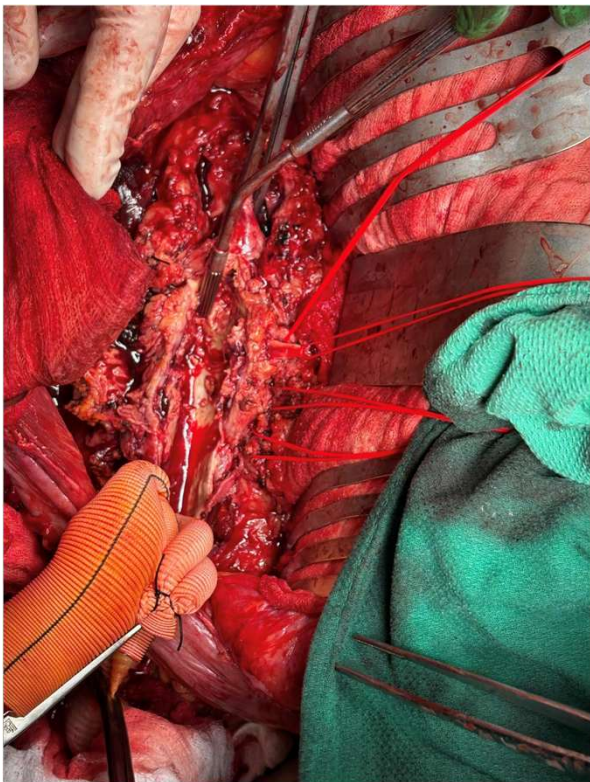


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Infected aneurysm



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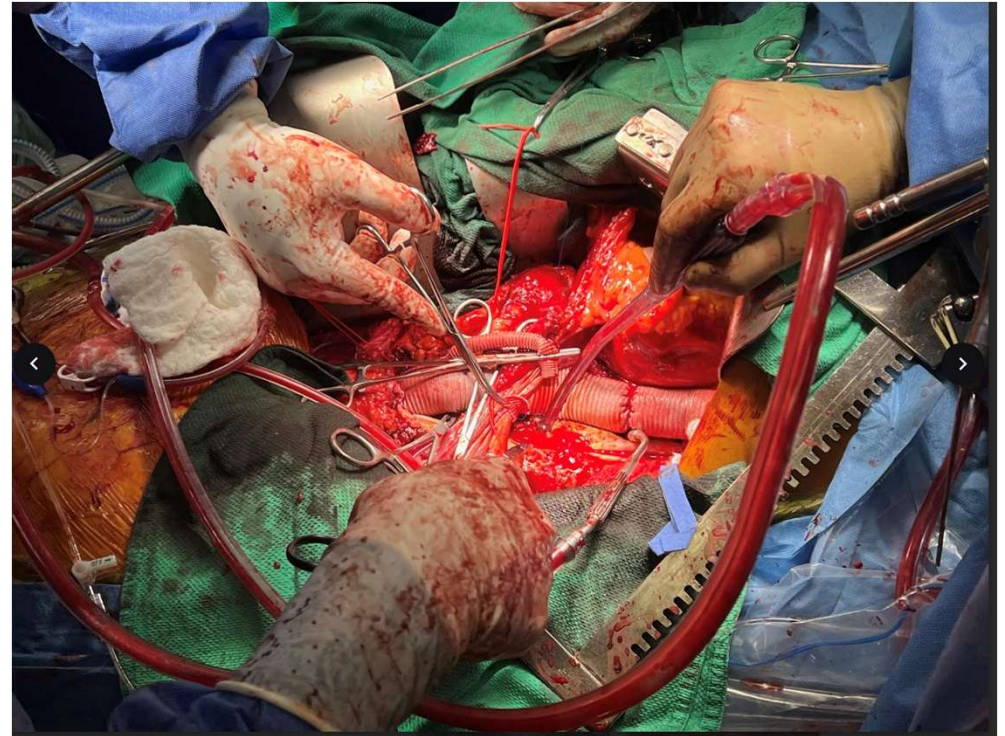


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CTBAD with poor anatomy



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